- Collects, stores and displays half-hourly and special *reports* from the exchange. Typically information is available on market volume, market index, indices for industrials, transportation, utilities, financials, volume, etc.
- Displays three lines of the current *ticker*, showing trades as the exchange is reporting them.
- Simple keyboard *commands* allow modification of the symbol list, or limits at any time, or to call up the desired information onto the viewing screen.
- *Hard copy* printout of ticker information is optionally available.
- *Basic Language Subroutines* to access any data stored by *Tickertec* is available as an option. Users may write their own programs to use this data.

```
                  PRICE LIMIT MONITOR                      07 05 79
        LAST    HIGH    LOW    +VOL   -VOL  H.IMIT  -LIMIT

AAR     15      15-1/2  15      500   2200  15-3/4  14-1/2
ALF     22-5/8  22-7/8  22-1/2  2300  4300  23-1/8  22
ASE     6-7/8   7       6-7/8   000   200   7-1/2   0
AVC     11-5/8  11-5/8  11-5/8  000   500   0       0
BLT     23-5/8  0       0       000   000   0       0
CLB     23      23      23      200   000   0       24-3/8    ■ LOW ■
CLN     16-3/4  16-7/8  16-1/2  900   400   0       0
DEV     17-3/8  0       0       000   000   0       0
DPC     15      15-1/4  15      1000  1400  0       14
EV5     14-1/2  14-1/8  14-1/8  000   200   14-3/4  14
FDO     13      13      12-3/4  2600  500   0       0
FI      8-1/2   8-5/8   8-1/2   000   1000  9-3/8   0
MGI     8       8-1/8   8       000   600   0       8-1/4     ■ LOW ■
IBL     23-3/8  23-7/8  23-1/4  1200  700   0       0
KRC     22-1/2  22-5/8  22-1/4  3300  400   23      21-1/2
L       17-1/4  17-1/4  17-1/4  000   100   0       0

PUR LAC AVE MMD GDC CAM AQC DCA FRK ASI RDB GRT GRB RBT GRB MGA

REQUEST::>
```

Price Limit Monitor

Stocks can be monitored for price limits, +*Limit*, −*Limit*. When any limit is violated a beeper sounds and the characters *HGH* or *LOW* are displayed to the right. By simple keyboard commands one can page forward or backward 16 symbols at a time or go directly to the desired symbol. Limits may be readjusted at any time.

Operation of Tickertec-XPM

At the time of installation, the computer is connected to the ticker line which is leased from the stock exchange. Each morning the *Tickertec-XPM* program is loaded from a diskette to the computer memory. There is no need to dial up; the computer begins to receive last sale information from the exchange when the market opens, and the flow of information continues until all markets are closed. At the end of the trading day all data accumulated during the day is stored on the diskette for reloading on the subsequent trading day.

Hardware Requirements

Tickertec software is available for all computers supporting the North Star DOS, CP/M or a CP/M compatible operating system. The complete system typically includes a microcomputer with at least one "floppy disk" drive and a 1920 character CRT terminal with software controlled cursor.

Some of the compatible microcomputers are:

    North Star Horizon
    TRS-80 Model II
    Vector Graphic
    Cromemco
    Dynabyte
    And other 8080/Z-80 based
    microcomputers.

Typical CRT terminals are:

    Hazeltine 1500 or 1400
    Lear Siegler ADM-3
    Soroc
    And many others

Ticker Line

The system ties into a low speed stock ticker line from either the AMEX or the NYSE which provides the last sale information for securities traded on that exchange. With the purchase of *Tickertec-XPM* software the user will also receive the necessary forms and detailed information on how to apply to the exchange requesting a tie-in to the Western Union lines which provide the stock ticker information. There is a nominal connection charge and a low monthly rate for the information received through the line.

Normally connection is made within 30 to 45 days after submitting the application. Billing for this service is made directly by the exchange to the subscriber.

The exchanges also make available at a reduced rate a ticker line on which the information is delayed by 15 minutes.

The lease of the ticker line is the only monthly cost of running *Tickertec-XPM* on your own microcomputer.

Installation and Warranty of Tickertec-XPM

If you consider the purchase of *Tickertec-XPM*, arrangements can be made for a representative to call and

- Analyze your existing or planned hardware configuration;
- Make specific recommendations regarding changes, or additions to your hardware and explain their effect on system performance.

With a purchase commitment:

- Your *Tickertec-XPM* software will be configured to match exactly your hardware configuration, memory size, desired stock exchange and operating system.
- You may purchase any specialized hardware additions or part of your existing hardware may be set up if required to match *Tickertec-XPM*. (See price list for hardware items.)
- You will receive complete and detailed instructions to set up the system.
- You will receive assistance through the telephone should you have any difficulty in getting *Tickertec-XPM* operating.

This complete service gives you a virtual "*turn key*" system. There is no requirement to have a prior understanding of electronics or computer technology. A detailed Users Manual furnished with the system describes the simple set up and operating procedures. The manual is available separately for those who wish to study the operation of the system in more detail prior to a purchase commitment.

All *Tickertec* software is guaranteed for proper operation in accordance with the description in the users manual for a period of four months from date of purchase.

It is suggested that you purchase the microcomputer hardware from a reputable local dealer to assure convenient access to service in case of malfunction.

Demonstration

Demonstration of any of the *Tickertec* products described here can be arranged in either the New York City or Rochester, New York areas.

For further information contact:
Micronex, Inc.
P. O. Box 2170
Mendon, New York 14506

or call (716) 624-1392
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Footnotes:

Tickertec™, Copyright 1977, Intersystems Software, Inc., all rights reserved.

CP/M® is a trademark of Digital Research Corporation.

TRS-80 is a trademark of Tandy Corporation.

[1] SEC regulations do not permit investment companies to utilize low speed tape data in providing advice to clients about executions. Information is for internal use only.
[2] The cost of your *Tickertec-XPM* and your microcomputer may be tax deductible. Consult your income tax advisor.
[3] Some brokerage firms may give additional commission discounts when a customer has its own stock quotation facility.
[4] *Tickertec-XPM* utilizes the low speed tickertape. During heavy trading, this tape may run late. The exchange may also drop volume information and repeated prices during these periods. For this reason volume information displayed may be lower than actual.
[5] The number of stocks the system can monitor depends on the amount of RAM memory available in the microcomputer. *Tickertec-XPM* must be configured initially for the available memory.

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P.O. Box 2170
Mendon, New York 14506

Tickertec-PMS
The Portfolio Management System

A microcomputer based investment portfolio management system to handle multiple accounts and any number of securities limited only by the available computer memory. Interfaces directly to the database generated daily by *Tickertec-XPM* to automatically update securities prices and total value of each portfolio.

Tickertec-PMS is the perfect companion to *Tickertec-XPM.*. Before leaving the office after the close of the market, your account and the accounts of your clients can be updated in a matter of minutes to show any new buy and sell executions and all portfolios re-valued automatically based on the closing prices of each security.

Highlights of Tickertec-PMS Features

- Separate portfolios maintained.
- Purchase transactions recorded. Maintains record of number of shares, selling price, cost of sale, date of transaction.
- Sale transactions recorded. Maintains record of number of shares, selling price, cost of sale and date of transaction.
- Sale against multiple buy of a security offers choice of selective posting against the various long positions.
- Partial quantity sell orders are handled.
- Pricing of securities in the portfolio updated manually or automatically by using the database from *Tickertec-XPM*.
- Report generated giving current portfolio value and detailed information on position and the day's activity. Sell orders are shown separate and only posted against the long position after report generation.
- Menu of commands available is displayed upon request.

Hardware/Software Requirements

Tickertec-PMS runs on any microcomputer which has the CP/M or CP/M compatible operating system. It also requires the *Microsoft Basic* interpreter software which can be purchased from either Microsoft or any of its distributors.

Tickertec
Database Retriever

Tickertec-XPM is an advanced tool for not only displaying current securities information, but also to store large quantities of this data on diskette for further analysis later. The *Database Retriever* is a program to make this stored data conveniently accessible by various custom programs written in Basic language which the user may wish to develop.

Many clever, proven, or proprietary strategies designed to improve the profitability of stock transactions suffer from the lack of convenient and low cost availability of securities information. With *Tickertec-XPM* the day's history on over 500 securities is available in machine readable format compatible with your computer and just minutes after the close of the market. The *Database Retriever* takes this convenience still one step further. The user's program written in *Basic* can simply "call" for any of the data stored on the diskette and the *Database Retriever* does the job of "retrieving" it. The user need not become familiar with the data organization on the diskette.

Similarly, the *Database Retriever* can be used to modify or add to the information on the *Tickertec-XPM* diskette via the user's own Basic program.

A user's manual, supplied with the purchase of the *Database Retriever*, describes its features and how it interfaces with user programs.

Some examples for using the *Database Retriever* are:

- To build a cumulative historical database for the stocks monitored by *Tickertec-XPM* and store this extracted data in more compact form on a separate diskette.
- To automatically calculate daily several moving averages, or do some other digital filtering, for many or all of the stocks monitored by *Tickertec-XPM*.
- To perform at the end of each day automatic options pricing on all stocks with options using the Black-Scholes[6] model and stock closing data from *Tickertec-XPM*.

This list is limited only by the imagination of the user.

Hardware Requirements

The *Database Retriever* runs on any of the computers specified for *Tickertec-XPM*. The version compatible with the North Star computer interfaces with North Star *Basic*. The version compatible with CP/M operating systems interfaces with Microsoft *Basic*.

[6] Black-Scholes model published in the Journal of Political Economy, Vol. 81, No. 3, May/June 1973.

Cover photograph, courtesy of American Stock Exchange, Inc.

I am interested in the *Tickertec* software products described in your brochure.

☐ I would like to discuss my computer hardware requirements.

Best time to call me: _____

☐ I would like to receive a copy of the user's manual describing *Tickertec-XPM & Tickertec-PMS*. Enclosed is my check for $20.00 to save postage and handling.

☐ I would like to receive a copy of the user's manual describing *Tickertec-XPM & Tickertec-PMS*. Please send it COD and charge $20.00 plus postage and handling.

☐ Please continue to keep me informed of new investment oriented software products you will be announcing in the future.

Name: _____ Title: _____

Firm: _____

Address: _____
                          (Street)

_____
(City)   (State)   (Zip Code)

Telephone: _____
              (Business)   (Home)

Price List and Order Form
Tickertec-XPM & Tickertec-PMS Software and Accessories

Tickertec-XPM*   **$2500.00**   _____

    To run on North Star Horizon, any configuration with at least one disk drive. Manual included.

Tickertec-XPM* †   **$2650.00**   _____

    To run on any other microcomputer which supports a CP/M or CP/M compatible operating system. Manual included

Tickertec-PMS   **$150.00**   _____

    Portfolio Management System with manual. (CP/M systems only, requires Microsoft Basic.)

Manual   **$20.00**   _____

    Operators manual for *Tickertec-XPM* and *Tickertec-PMS*.

Database Retriever   **$250.00**   _____

    A program designed to interface between the *Tickertec-XPM* database and Microsoft Basic or North Star Basic.

Hard Copy Option   **$175.00**   _____

    Allows printing of entire ticker or monitored stocks on your line printer.

Clock Generator   **$55.00**   _____

    A small circuit board with three wires to connect. Generates special signals required to connect to the ticker line, Not required for TRS-80.

Cable   **$25.00**   _____

    A 6' long cable with type RS-232 connector to connect the computer to the ticker line.

Simulator   **$400.00**   _____

    Interfaces a voice cassette recorder to the ticker line or the computer. Lets one record ticker information and play it back later into the computer for simulation. Includes schematic.

Schmematic   **$100.00**   _____

    Schematic diagram only, for the simulator.

Back-up Diskettes   **$50.00**   _____

Totals for hardware and software products. $ _____

Applicable taxes, shipping and handling charges will be billed at time of shipment.

Introductory Offer Only**
A Package Including
Tickertec-XPM and Some Valuable Utility Programs

Tickertec-XPM . . . . $2500.00 Value
Clock Generator . . . . 55.00 Value
Cable . . . . 25.00 Value
Tickertec-PMS . . . . 150.00 Value
Database Retriever . . . . 250.00 Value
Hard Copy Option . . . . 175.00 Value

Total Package - $3155.00 Value

Your Introductory Price . . . . **$2975.00**   _____
(Add $150.00 if system is not North Star)

Total Amount of the Order $ _____

Amount Enclosed *** $ _____

Please configure my *Tickertec-XPM* to have the following features:
    Exchange   NYSE: ☐   AMEX: ☐   Number of symbols to be monitored: _____

I presently own a microcomputer and my hardware configuration is:

Microcomputer
    Make: _____ Model: _____ Amount of RAM memory: _____

Operating System
    CP/M: ☐ North Star Single Density DOS: ☐ North Star Double Density DOS: ☐
    Other: _____

CRT Terminal
    Make: _____ Model: _____

Please read and fill out both sides, sign reverse side and return to:

Micronex, Inc.
P.O. Box 2170   (716) 624-1392
Mendon, New York 14506

* Price of previously purchased manual can be subtracted.
** This offer may be withdrawn at any time.
† The CP/M operating system is not included. User must obtain that separately.
*** *Tickertec-XPM* is configured uniquely to meet each customer's specific requirements for hardware, operating system, market and number of symbols to be monitored. For this reason it is a corporate policy to require an $800.00 remittance at the time an order is placed for this sytem. To avoid delays, this remittance should be in certified or teller's check made payable to Micronex, Inc.

Tickertec Application and Purchase Agreement

Please furnish the *Tickertec* products in the configuration indicated on the reverse side of this form to:

Name: _____ Title: _____

Address: _____

Telephone: _____   _____
(Business)   (Home)

Hereinafter the user whose name appears filled in above will be referred to as "User", Micronex, Inc. as "Micronex" and Intersystems Software, Inc. as "ISS". ISS will deliver the *Tickertec* products to the User at the address stated above, as production units become available. The User has paid the required deposit to bind this agreement and will pay any balance due upon delivery. The balance will include all costs of shipping and handling as well as applicable taxes. Costs are based on forwarding form the closest Micronex distribution point.

Micronex will supply the User the instructions and the forms necessary for exchange approval for the link-up of a *Tickertec* system to the NYSE or AMEX low speed communications lines (either immediate or 15 minute delayed). The user shall be required to complete these forms and submit them to the exchange for approval. *Tickertec* software is a copyrighted product of ISS who retains sole ownership of the product. The software is internally registered at the factory. **Copying or modifying Tickertec software is prohibited.** The software is strictly for the use of the User on a single processor. Copies for use on other processors owned by the User are available from ISS. Each copy produced will carry its own registration I.D. The software may not be transferred, sold, given as a gift or released to any other party without the written consent of ISS. *Tickertec* and all related information provided by Micronex in the performance of this agreement shall be the sole properly of ISS and ISS is vested with all rights therein of whatever kind and however created whether by common law, statutory law or equity.

ISS warrants that a copy of the *Tickertec* software has been stored on the diskette which is provided and has been checked at the factory for proper operation. If the diskette malfunctions and has not been damaged by the User, then ISS will replace the storage media if it is returned to Micronex postage prepaid, within two months of the date of purchase. ISS guarantees proper operation of the software for a period of four months. If the program does not function as stated in the Micronex literature, then it will be repaired at no cost to the User other than shipping and media costs. Micronex warrants that a copy

of the documentation required to properly operate *Tickertec* will be provided to the User.

Neither Micronex nor ISS will be responsible nor will they incur any liability of any kind, nature or description to the User, its agents, employees or any person, firm or corporation, whether direct or consequential, in the event of failure or fault in the *Tickertec* software or in the condition or operation of the hardware executing the package, or for the errors or omissions in the transmission or display of information in connection with the services provided by *Tickertec*.

If hardware is provided with this order then ISS warrants the electrical and mechanical portion of the equipment to be free of defects for a period of 60 days from the date of delivery. ISS will arrange to repair any defect which occurs during this period, free of charge. This warranty does not extend to defects resulting from the improper use of the equipment, or adjustments, modifications, or disassembly of any part, nor does it cover transportation to or from the factory for repair. Should returned equipment for warranty repair be deemed by ISS to be defective due to User action, then a repair charge not to exceed $100.00 without user consent, will be assessed. The equipment delivered by Micronex may be installed by the User or by ISS assigned personnel. The installation charge is available from Micronex upon request. The installation instructions furnished in the user's manual are normally adequate, however, additional information will be supplied by ISS when considered necessary, or if the User requests additional information.

Neither Micronex nor ISS make any representations or warranties with respect to the *Tickertec* software and specifically disclaim any implied warranties of merchantability or fitness for any particular purpose. This agreement shall be binding upon and may be enforced by ISS and its heirs, executors, successors, assigns and legal representatives. All notices under this agreement shall be in writing and served either by certified mail, return receipt requested, or personally.

This instrument contains the entire agreement between Micronex, ISS and the User. Any agreement or representation which are not set forth herein are null and void.

Intersystems Software, Inc. is the developer of *Tickertec* software, Micronex, Inc. is a dealer for ISS.

Accepted

User: _____ Date: _____
                        (Signature & Title)

Intersystems
Software, Inc. _____ Date: _____
                        (Signature & Title)

Micronex, Inc. _____ Date: _____
                        (Signature & Title)